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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,380

01/23/2006

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5562

52989

7590

05/29/2009

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EXAMINER

TIMORY, KABIR A

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

05/29/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,380	<b>Applicant(s)</b> OTA ET AL.	
	<b>Examiner</b> KABIR A. TIMORY	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 2,3 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/23/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 2-3 and 5 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 3/20/2009.

### Response to Arguments

#### 2. Answer to Arguments with Traverse:

Applicant's election with traverse of group 1 claims 1 and 4 in reply filed on 03/20/2009 is acknowledged.

The traversal on the group(s) that *"No unduly extensive or burdensome search would be required to examine the various claims of the noted Groups in the same application.... Moreover, from the standpoint of costs to the Applicants involved in filing, issuance and maintenance fees relating to separate applications if the present Restriction Requirement is maintained, it is clear that there is substantially more burden on Applicants by imposing the present Requirement than on the Patent Office if the Requirement were withdrawn. In addition, it is noted that to require the claims of the various Groups to issue in separate patents would result in inconvenience to the public by necessitating reference to more than one patent during searching, to review closely related subject matter"*. This is not found persuasive because group 1 (claims 1 and 4) drawn to a single side-band modulation, classified in class 375, subclass 301 and group 2 (claims 2, 3 and 5), drawn to single side-band demodulation,

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classified in class 375, subclass 321. These two groups are distinct inventions which are claimed in a single application.

### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

4. Claims 1 and 4 are objected to because of the following informalities:

(1) In claims 1 and 4, define acronyms “**SSB**”, “**USB**”, and “**LSB**” in the claim.

**Appropriate correction is required.**

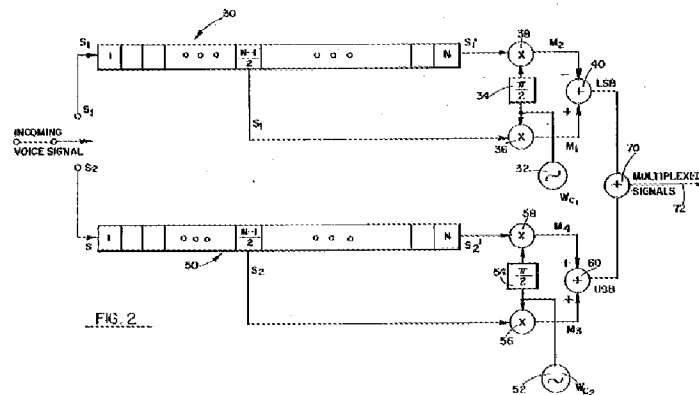
### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**6. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Daoud et al. (US 4835791) (disclosed in the IDS filed on 01/23/2006).**



### Regarding claims 1 and 4:

As shown in figures 1-3, Daoud et al. disclose a modulation apparatus comprising:

- a first frequency-increasing SSB modulator (**30 in figure 2**) that performs SSB modulation on a first input symbol ( **$S_2$  in figure 2**) to obtain a USB signal (**USB in figure 2**) (**col 2, lines 29-47**);
- a second frequency-increasing SSB modulator (**50 in figure 2**) that performs SSB modulation on a second input symbol ( **$S_1$  in figure 2**) to obtain a LSB signal (**LSB in figure 2**) (**col 2, lines 29-47**); and
- a combiner (**70 in figure 2**) that combines the USB (**USB in figure 2**) signal and the LSB signal (**LSB in figure 2**) (**col 2, lines 29-47**),
- wherein the second frequency-increasing SSB modulator performs SSB modulation using a carrier frequency higher than a carrier frequency used in the first frequency-increasing SSB modulator by the fundamental frequency of the input symbol (**col 4, lines 38-49**).

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hurst et al. (US 4866521) disclose an advanced compatible television system with auxiliary carrier.
- Montreuil et al. (US 5477199) disclose a Digital quadrature amplitude and vestigial sideband modulation decoding method and apparatus.
- Dorrough et al. (US 7016659) disclose an amplitude modulation with time- and spectrum-shared sidebands.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KABIR A. TIMORY whose telephone number is (571)270-1674. The examiner can normally be reached on 6:30 AM - 3:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kabir A Timory/

Examiner, Art Unit 2611

/Shuwang Liu/

Supervisory Patent Examiner, Art Unit 2611